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The Demographic Foundations of Rising Employment and Earnings Among Single Mothers in Canada and the United States, 1980 to 2000

by John Myles, Feng Hou, Garnett Picot and Karen Myers

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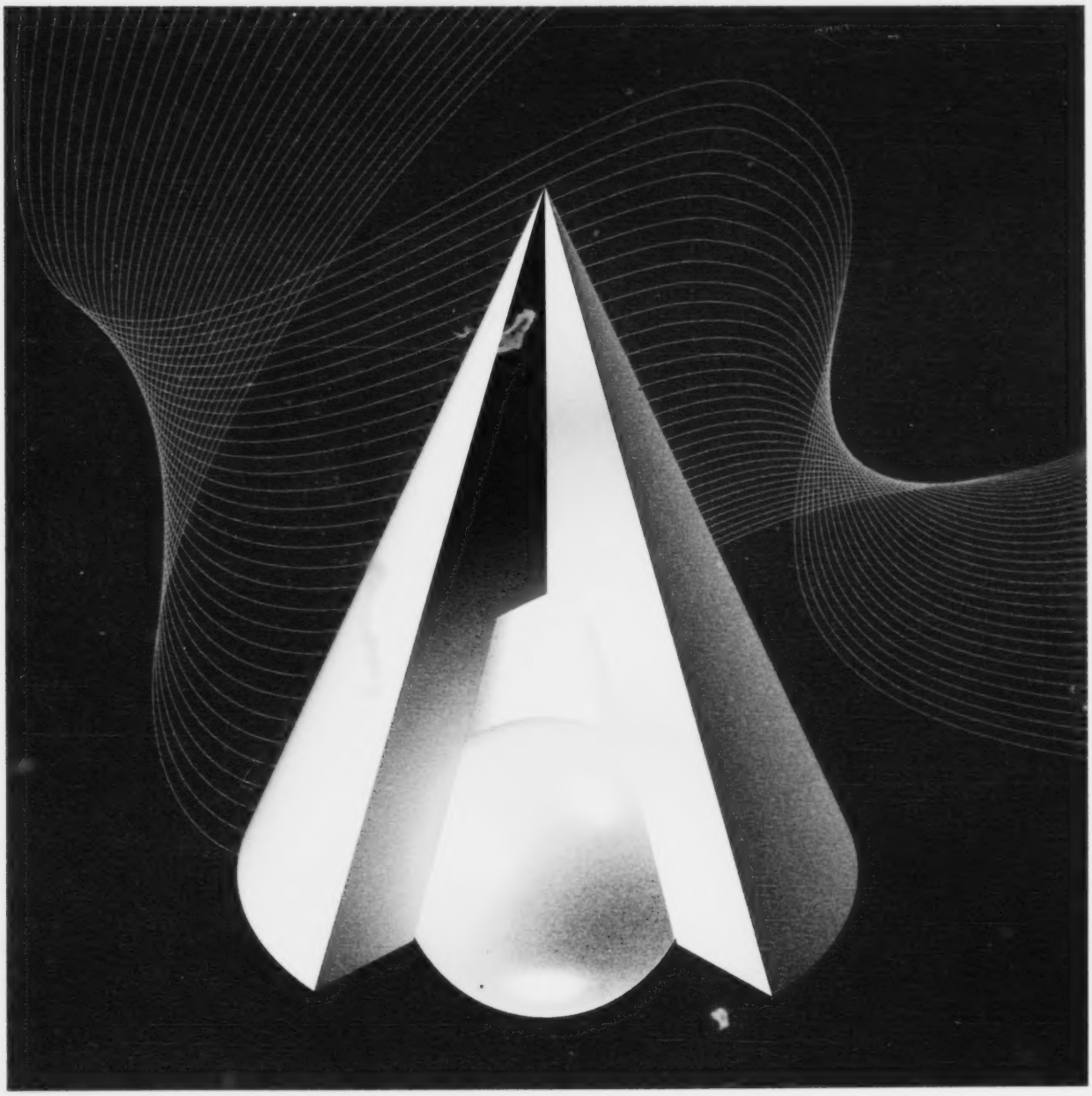

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Abstract

Despite comparatively modest welfare reforms in Canada relative to those of the United States, employment rates and earnings among single mothers have risen by virtually identical magnitudes in the two countries since 1980. We show that most of the gains in Canada and a substantial share of the change in the United States were the result of the dynamics of cohort replacement and population aging as the large and better educated baby boom generation replaced earlier cohorts and began entering their forties. In both countries, demographic effects were the main factor accounting for higher employment and earnings among older (40 and over) single mothers. Changes among younger single mothers, in contrast, were mainly the result of changes in labour market behaviour and other unmeasured variables. Overall, demographic changes dominated in Canada but not in the United States for two reasons: (a) Canadian single mothers are significantly older than their U.S. counterparts; and, (b) consistent with the welfare reform thesis, the magnitude of behavioural change among younger single mothers was much larger in the United States.

Keywords: female single parents, employment rate, earnings

Executive summary

From 1980 to 2000, employment and earnings rose substantially, and by almost identical amounts, among lone mothers in Canada and the United States. As a result, low income rates among lone mothers and their children also declined over the period.

American studies have almost uniformly attributed the U.S. trend to changes in the labour market behaviour of lone mothers induced by the dramatic welfare reform associated with the *Personal Responsibility Act* of 1996 that made access to social assistance benefits more difficult and set time limits on their receipt.

During the 1990s, a number of Canadian provinces also introduced 'welfare-to-work' legislation and Quebec expanded employment opportunities for lone mothers by greatly expanding day-care subsidies. In an earlier study, however, we demonstrated that the Canadian trend was almost entirely due to changes in the social characteristics that condition labour force participation of lone mothers. Quite simply, the rise in employment and earnings among Canadian lone mothers can be almost entirely explained by the fact that, in 2000, Canadian lone mothers were significantly older and much better educated than they were in 1980.

The implication of these previous studies is that, while virtually identical in magnitude, the rise in lone mothers' employment and earnings in the two countries was the result of very different processes. To test this assumption, we isolate and compare the 'demographic' contribution to changes in the labour market outcomes of single mothers in Canada and the United States during the 1980s and 1990s.

We show that most of the change in employment and earnings among Canadian lone mothers was the result of changes in education and age composition but, consistent with the welfare reform thesis, this was not the case in the United States.

National differences in the demographic composition of single mothers, however, help to explain the differences in the relative importance of demographic effects in the two countries. In both countries, changes in socio-demographic composition account for most of the change among older (40 and over) lone mothers and these changes occurred mainly in the 1980s, well before the welfare reforms of the 1990s. Moreover, unlike the United States, almost all of the employment and earnings gains in Canada went to lone mothers over 40. Among younger single mothers, in contrast, employment gains in both countries occurred mainly in the 1990s and changes in 'behaviour,' not social composition, was the main reason. These results are consistent with the conclusion that, in both countries, employment gains for younger lone mothers were social policy induced. The magnitude of these effects among younger lone mothers was much larger in the United States, however, and younger women make up a much larger share of the U.S. lone-mother population.

These differences are consistent with the conclusion that welfare reform played a large role in driving up lone mothers' employment in the United States, whereas the Canadian trend was mainly demographically induced.

1 Introduction[1]

Rising female employment has been a defining feature of all contemporary labour markets, and single mothers have been no exception to this trend. Since the beginning of the 1980s, employment rates of single mothers have risen by 12 percentage points in Canada and by 13 percentage points in the United States. Earnings of all single mothers (including those with zero earnings) were up by almost 40% in both countries. Indeed, apart from initial differences in employment levels (U.S. single mothers have always been more likely to be employed), trends in employment and earnings might suggest Canadian and U.S. single mothers are two samples drawn from the same population (Panel 2, Table 1). Moreover, the decline in single-mother poverty rates in the United States in the latter part of the 1990s was paralleled by a similar decline in Canada. These broad similarities in outcomes suggest that they may have been driven by much the same forces. But were they?

Table 1
Levels and trends in employment and earnings among single mothers in Canada, 1980 to 2000, and the United States, 1979 to 1999

	United States			Canada		
Year	1979	1989	1999	1980	1990	2000
Level						
Positive earnings (%)	69.1	72.3	81.7	61.0	66.4	73.1
40 weeks and more among employed (%)	48.8	52.8	63.5	42.3	45.9	55.5
Average earnings, all (national currency)	13,548	15,224	18,571	13,207	15,514	18,324
Average earnings, employed (national currency)	19,615	21,062	22,733	21,684	23,376	25,073
Period	1979 to 1999	1979 to 1989	1989 to 1999	1980 to 2000	1980 to 1990	1990 to 2000
Change						
Positive earnings (%)	12.6	3.2	9.4	12.1	5.4	6.7
40 weeks and more among employed (%)	14.7	4.0	10.7	13.2	3.6	9.6
Average earnings, all (%)	37.1	12.4	22.0	38.7	17.5	18.1
Average earnings, employed (%)	15.9	7.4	7.9	15.6	7.8	7.3

Note: Estimates for the United States are calculated by the authors from the U.S. census Public-Use Microdata Sample files. Estimates for Canada are calculated by the authors from master data files from the Canadian census. Employment and earnings are reported for the year preceding the census.
Sources: Statistics Canada, Census of Canada, 1981, 1991 and 2001; U.S. Census Bureau, U.S. Census, 1980, 1990 and 2000.

1. This comparative Canada–United States study builds on a previous study of Canadian single mothers reported in Myles, Hou, Picot and Myers (2007).

There are two broad reasons for long-term trends in mothers' employment. First, major socio-cultural shifts, changes in labour demand, and government policies aimed at encouraging women's employment have transformed the labour market behaviour of women with otherwise similar family and labour market characteristics. Mothers with small children, for example, are much more likely to remain in, or return to, employment and women of all ages and education levels are more likely to be employed than in the past. Governments have also intervened to change the labour market behaviour of single mothers. The Earned Income Tax Credit in the United States and the National Child Benefit in Canada were designed to encourage work by providing an earnings subsidy to mothers with low earnings. And in both countries 'welfare-to-work' and other legislative changes were adopted to discourage receipt of social assistance. In the United States, The 1996 *Personal Responsibility Act*, which imposed time limits and work requirements on welfare mothers, was emulated in similar, albeit more modest, reforms in several Canadian provinces during the 1990s and the province of Quebec introduced dramatic increases in child care subsidies.[2]

Of importance, however, is that the socio-demographic characteristics of mothers and their families that condition their labour force participation and earnings have also changed dramatically. Today's mothers, including single mothers, are much better educated, considerably older and have fewer children than in the past. In 1980, the population of single mothers was made up predominantly of cohorts born before 1950. During the 1980s and 1990s, they were replaced by the baby boom cohorts born in the 1950s and 1960s, women with much higher levels of education and labour force attachment. During the 1990s, these changes were amplified by the aging of the baby boom in two ways. First, the baby boom cohorts began entering their forties, an age when both employment and earnings tend to be higher. As a result, the share of all single mothers over forty rose while the share of single mothers under thirty declined. Second, as the baby boom mothers aged, their educational profile improved substantially, reflecting the tendency of early births to occur among less educated women and a greater likelihood of divorce and separation happening among more educated women.

In the United States, research on the increase in labour force participation and declining welfare caseloads among single mothers has focused mainly on the relative contribution of the 1996 welfare reforms on the one hand and economic recovery of the late 1990s on the other (Blank 2002). While several U.S. studies include educational attainment as a 'control variable' in their models (e.g., Eissa and Liebman 1996; Meyer and Rosenbaum 2001; Grogger 2003), there has been relatively little emphasis in the United States on the link between demographic change and the increased economic well-being of single mothers. In her comprehensive review of the welfare reform literature, Blank (2002) does not report any studies that cite rising levels of educational attainment as a potential explanatory factor. Fang and Keane (2004) note that education levels among single mothers have risen dramatically since the 1970s but dismiss the potential impact of such changes, arguing that most of the gains occurred before 1996 and therefore could not account for recent changes. Early Canadian work by Dooley (1994) also concludes that changes in the socio-demographic characteristics that condition employment accounted for only a modest share of employment gains among Canadian single and married mothers over the 1973-to-1988 period.

2. For example, in Ontario, social assistance benefits for single parents were cut by 21% and single parents were required to participate in mandatory work-first programs that focused on rapidly attaching participants to the labour market, although exceptions were made for single parents with pre-school children (McMullin, Davies and Cassidy 2002).

Our aim in this paper is to isolate the 'demographic' contribution to changes in the labour market outcomes of single mothers in Canada and the United States during the 1980s and 1990s. Our analysis is based on three comparable census years (see Table 1) at roughly similar stages in the business cycle. We find that changes in labour force participation and earnings among single mothers were driven by rather different processes. In Canada, changes in employment and earnings over the two decades were mainly due to changes in the socio-demographic composition of single mothers, i.e., to 'demography.' In the United States, in contrast, changes in the labour market behaviour of single mothers with otherwise identical characteristics were the major factor.

National differences in the demographic composition of single mothers, however, help to explain the differences in the relative importance of demographic effects in the two countries. In both countries, changes in socio-demographic composition account for most of the change among older (40 and over) single mothers, while changes in behaviour were the main source of employment gains among younger mothers. Since Canadian single mothers are significantly older than their U.S. counterparts, and behavioural change among younger mothers was much less in Canada than in the United States, demographic effects dominate the Canadian but not the U.S. trends. Employment and earnings gains for older single mothers were driven mainly by changes in their educational attainment and other socio-demographic characteristics and occurred mainly in the 1980s well before the welfare reforms of the 1990s. In contrast, among younger single mothers, employment gains in both countries occurred mainly in the 1990s and changes in behaviour, not demography, were the main reason; these results are consistent with the conclusion that employment gains for single mothers under 40 were social policy induced.[3] Moreover, behavioural effects were much larger in the United States than in Canada. Net of demographic effects, employment among young U.S. single mothers rose by over 10 percentage points during the 1990s compared with 4 percentage points in Canada.

As taken up in the conclusion, these differences in behavioural changes among younger single mothers are also consistent with national differences in the magnitude and type of change in the income support system for single mothers over the 1990s.

2 Data and analytical approach

Our data come from two sources: the master files of the Canadian Census for 1981, 1991 and 2001, a 20% sample of the Canadian population, and the U.S. 5% Public-Use Microdata Sample files for 1980, 1990 and 2000. The very large samples available from these sources overcome the limitations inherent in alternative data sources for studying small populations, e.g., single mothers, such as the U.S. Current Population Survey or the Canadian Survey of Consumer Finances and its successor, the Survey of Labour and Income Dynamics. Since data on income, earnings and labour force attachment are for the previous calendar year, we identify our results for Canada with the years 1980, 1990 and 2000 and for the United States with the years 1979, 1989 and 1999. Since the observation years roughly approximate business cycle peaks, we can be reasonably confident that

3. We use the term 'consistent with' since our analytical strategy does not allow us to isolate the net effect of social policy changes versus other unmeasured variables that could account for changes in labour market behaviour.

our conclusions are not confounded with business cycle effects.[4] We restrict our sample to single mothers under age 65, with one or more children aged 18 or younger.

Our leading question is to what extent can the rise in the employment rate and earnings of single mothers be explained by changes in their demographic composition? To establish the contribution of compositional changes, we consider three outcomes. First we examine rates of labour force participation (indicated by the presence of positive earnings during the previous year) and, then, of (log) annual earnings among those with positive earnings. Earnings are expressed in constant 1999 and 2000 dollars.[5]

Since trends in annual earnings reflect changes in both wage rates and labour supply (hours and weeks worked), we also include estimates of changes in (log) weekly earnings. We take advantage of the fact that the change in the mean of log annual earnings is simply the sum of the change in the mean of log weekly earnings and the mean of log weeks worked. Comparison of the two sets of results allows us to determine the extent to which changes in annual earnings and the components affecting those changes were the result of changes in labour supply (weeks worked) or changes in earnings per week. Ideally, our estimates for average weekly earnings would also control for hours worked per week. Unfortunately, the Canadian census data do not allow for accurate estimates of hours worked. Instead, we include a control for whether the respondent usually worked on a full-time or part-time basis.

The independent variables include a set of dummies for age (divided into five-year cohorts); education (less than high school, high school completion, any postsecondary, university degree); number of children 18 and under, and dummies indicating presence of a child less than 6; immigrant status; and, marital status (never married, divorced or separated, widowed).[6] Historically, non-whites have made up a substantial share of the U.S. population and a small but rising share of the Canadian population. We include standard census indicators for 'race' (Whites, Blacks, Asians, Hispanics and Other) for the United States and for 'visible minority' status (Whites, Blacks, Asians and Other) for Canada.

To determine the extent to which changes in the employment and earnings of single mothers can be explained by changes in their demographic composition, we employ a standard Oaxaca-Blinder (Oaxaca 1973; Blinder 1973) decomposition. The objective is to 'decompose' the change in our dependent variables (employment and earnings) into three portions: the portion that can be 'explained' by changes in demographic composition (as indicated by changes in the means of the explanatory variables in our model), the portion that is 'unexplained' (as indicated by changes in the associated coefficient estimates) and their 'joint effect' or interaction.

For each of our dependent variables, we begin by estimating separate regression models for each time period. For example, we have regression models $Y_1 = a + B_{1i}X_{1i} + e_1$ for earnings at time 1 and $Y_2 = a + B_{2i}X_{2i} + e_2$ for earnings at time 2. The difference in the means between $\overline{Y_1}$ and $\overline{Y_2}$ $(\Delta \overline{Y})$

4. The U.S. observation years are somewhat superior in this respect. The observation year for the 1990 Census is 1989, before the onset of the recession that began in the middle of 1990.

5. Since our focus is on change in log earnings (which approximates a percentage change) rather than the absolute change, earnings are expressed in national currencies without adjustment for differences in purchasing power.

6. Our marital status indicator is less than ideal since, among the never married, we cannot separate the previously single from those previously in common-law unions.

that can be attributed to the differences in the means between X_{1i} and X_{2i} is called the 'explained' component in means-coefficients analysis. The explained portion identifies the contribution of changes in measured characteristics such as education, age, number of children, etc. The remaining portion of $\Delta\overline{Y}$ represents changes that are 'unexplained' by changes in the values of the independent variables, that is, by changes in the coefficients. The unexplained portion contains the effects of all unmeasured variables that are not part of the model including, but not limited to, behavioural changes due to social policy reforms. The unexplained portion associated with changes in the coefficients identifies the share of change that could potentially be accounted for by policy reforms; but our method does not allow us to isolate the magnitude of the policy impact relative to other omitted variables or to real changes in returns to education and other characteristics included in the models.

The size of the explained component may vary greatly, depending on whether B_{1i} or $B_{2i,}$ are used as weights (Blau and Graham 1990). The differences in the explained components derived from B_{1i} or $B_{2i,}$ equals the joint effect of means and coefficients captured by the interaction term. A very large interaction term implies the results are conditional on the choice of weights and no unique interpretation of the shares allocated to the explained and unexplained components is possible. As our results show, our findings are largely unaffected by this problem.

Because our employment variable (share with positive earnings) is dichotomous, we made separate estimates with both the Oaxaca-Blinder method and the Even-MacPherson (1994) approach. The former uses an ordinary least-squares (OLS) regression model to estimate the probability of being employed; the latter uses a logit model. The advantage of the Oaxaca-Blinder decomposition is that it can decompose the overall change into three components: (a) the share due to changes in composition (the Xs); (b) the share due to changes in the coefficients (the effect of Xs); and, (c) the joint effect (or interaction) of changes in composition and coefficients. Its limitation, however, lies in the well-known problem of fitting OLS models for a dichotomous dependent variable. When the outcome is highly skewed (e.g., less than 20% in a category) the results are subject to 'floor' or 'ceiling' effects and can generate predicted probabilities outside the 0–1 range. The Even-MacPherson approach is statistically more appropriate for dichotomous outcomes; however, unlike the Oaxaca-Binder method, it is unable to identify the contribution due to the means-coefficient interaction. Moreover, the Even-MacPherson approach lacks the ready interpretation of the linear probability (OLS) approach. Since the distribution of our dichotomous outcome is well within the acceptable range for the OLS approach (Moffit 1999), and since both techniques yield substantively identical results, we present the OLS results for ease of interpretation.

3 Descriptive results

3.1 Changes in composition

Canadian single mothers have always been older, had fewer children and had fewer young children than their U.S. counterparts (Table 2). In 1999 and 2000, 27% of U.S. single mothers were under 30 compared with 18% in Canada. Some 20% of U.S. single mothers had three or more children compared with 13% in Canada, while 40% of U.S. single mothers had a child under six compared with 32% in Canada. As in the general population (Frenette 2005), Canadian single mothers are less likely than American single mothers to complete high school and university but, given high school completion, more likely to obtain some postsecondary education.

Immigrants make up a larger share of the single mother population and non-whites a much smaller share of single mothers in Canada than in the United States. By the turn of the century, non-whites represented 50% of U.S. single mothers compared with 15% in Canada, differences that mainly reflect the large indigenous black population in the United States.

Our focus, however, is not on point-in-time differences in *levels* but in differences in *changes* in labour market relevant characteristics that might account for corresponding changes in employment and earnings. In this respect, trends in the two countries were remarkably similar. First, the population of single mothers grew older as the large baby boom cohorts began entering their forties. In both countries, the share of single mothers under 30 declined by about 7 percentage points and the share of single mothers over 40 rose by 6 percentage points. The share of single mothers with less than high school declined by 25 percentage points in Canada and by 18 percentage points in the United States, while the share with postsecondary or university education rose by 24 percentage points in the United States and 21 percentage points in Canada. Overall change in the educational distributions in the two countries, as measured by the index of dissimilarity, were identical (D = 24). The share of never-married single mothers rose dramatically in both countries, mainly due to the rise in common-law unions (Dooley and Finnie 2001; Elwood and Jencks 2004).

Rising education levels reflected not only the higher levels of education among women born in the 1950s and 1960s (cohort replacement) but also the effects of cohort aging. Since more educated women marry, have children (and are more likely to become single parents through divorce and separation) later in life than less educated women, the share of single mothers in any given cohort with higher levels of education rises as a cohort ages. For example, only 36% of Canadian single mothers born in the 1946-to-1950 period had more than a high school education in 1981. By 2001, now in their forties, 58% of all single mothers from this cohort had more than high school. Since a much larger share of single mothers were in their 40s by 2001, the result was to increase substantially the aggregate educational attainment of all single mothers.

Table 2
Distribution of mothers with children under 18 years of age, by selected characteristics

	United States				Canada			
	1979	1989	1999	Change 1979 to 1999	1980	1990	2000	Change 1980 to 2000
	percent							
Age								
Under 25	16.1	13.8	13.0	-3.1	10.6	9.9	7.1	-3.5
25 to 29	18.3	18.3	14.7	-3.6	14.9	15.5	11.2	-3.8
30 to 34	20.7	22.4	17.4	-3.2	19.2	20.9	15.8	-3.4
35 to 39	17.3	20.1	21.4	4.0	18.7	22.4	23.3	4.6
40 to 44	11.8	14.3	17.7	5.9	13.9	18.1	22.8	8.9
45 to 49	7.6	6.6	9.9	2.4	10.4	8.3	13.2	2.8
50 to 54	4.9	2.7	4.0	-1.0	7.3	3.0	4.8	-2.5
55 and over	3.3	1.9	2.0	-1.4	4.9	2.0	1.8	-3.1
Number of children								
1	44.2	48.2	48.1	3.9	52.8	54.9	54.3	1.6
2	31.7	31.7	32.1	0.4	32.1	33.1	32.9	0.8
3	14.4	13.1	13.0	-1.4	10.9	9.4	9.8	-1.1
4 and more	9.7	7.0	6.8	-2.9	4.3	2.6	3.0	-1.3
Children under 6 years of age	39.1	43.1	40.7	1.6	32.8	38.5	32.2	-0.7
Education								
Less than Grade 12	34.9	22.2	16.8	-18.1	48.6	34.7	23.8	-24.8
Grade 12	41.7	37.9	35.7	-6.0	23.0	28.1	26.9	3.9
Some postsecondary	16.5	30.2	34.6	18.2	23.8	29.4	38.2	14.4
University degree	7.0	9.6	12.9	5.9	4.6	7.7	11.0	6.4
Immigrant status								
Foreign born	7.6	9.3	12.2	4.7	15.4	15.6	19.0	3.6
Race								
Whites	57.5	54.0	50.3	-7.1	95.1	90.9	85.2	-10.0
Blacks	31.9	32.2	30.8	-1.1	3.1	5.1	6.9	3.8
Asians	0.7	1.3	1.6	0.9	1.5	3.2	6.0	4.5
Hispanics[1]	8.9	11.1	14.1	5.3				
Others	1.1	1.4	3.2	2.1	0.3	0.9	2.0	1.7
Marital status								
Never married	20.5	30.5	37.2	16.7	16.6	29.4	38.1	21.5
Divorced or separated	68.1	63.2	57.8	-10.3	66.3	63.4	57.1	-9.2
Widow	11.4	6.3	5.0	-6.4	17.1	7.2	4.8	-12.2

1. Canadian data for Hispanics are combined with data for "Others."

Note: Estimates for the United States are calculated by the authors from the U.S. census Public-Use Microdata Sample files. Estimates for Canada are calculated by the authors from master data files from the Canadian census. Employment and earnings are reported for the year preceding the census.

Sources: Statistics Canada, Census of Canada, 1981, 1991 and 2001; U.S. Census Bureau, U.S. Census, 1980, 1990 and 2000.

3.2 Changes in labour market outcomes

We now turn to the raw changes in our dependent variables. Tables 3 and 4 show changes in the employment rates and annual earnings of employed mothers within categories of the main independent variables.

Although change in the participation rate was virtually identical in Canada and the United States—12 percentage points—the average change conceals large differences in the distribution of these changes by age, marital status and racial minority group. Three key findings are relevant to our analysis.

- In Canada, most of the gains were made by women over 40. In the United States, in contrast, the largest gains were among women under 30, among whom the participation rate rose by almost 17 percentage points compared with only 7 percentage points in Canada.

- There are also large cross-national differences within categories of marital status. The participation rate among the 'never married' was only 4 points higher in the United States than in Canada in 1979 and1980 but was 12 points higher by 1999 and 2000.

- Finally, and tellingly, participation rates among Blacks and Hispanics in the United States grew much more than among Whites. Conversely, almost all of the gains in Canada were among Whites, while participation among Blacks and Asians actually fell over the period, reflecting the more general decline in labour market outcomes among Canadian immigrants over the period.

It is conceivable, of course, that our indicator of participation—women with any earnings—is misleading with respect to total labour market effort—hours and weeks worked. Changes in the share of employed single mothers working almost full year (40 weeks and more) was up by 15 percentage points in the U.S. and 13 percentage points in Canada. Among younger single mothers, however, the gains were 16 percentage points in the United States and only 7 percentage points in Canada.

Table 3
Labour force participation among lone mothers with children under 18 years of age and with positive earnings

	United States				Canada			
	1979	1989	1999	Change 1979 to 1999	1980	1990	2000	Change 1980 to 2000
	percent							
Age								
Under 25	53.8	55.5	73.4	19.7	44.8	44.8	50.7	5.9
25 to 29	68.9	67.1	83.1	14.2	57.1	55.1	64.3	7.2
30 to 34	75.6	74.3	84.2	8.6	66.4	65.3	71.5	5.1
35 to 39	77.1	80.2	84.6	7.5	69.6	73.9	76.2	6.6
40 to 44	75.5	82.5	84.7	9.2	68.2	77.8	79.3	11.1
45 to 49	70.5	77.8	82.8	12.3	62.9	75.8	80.3	17.4
50 to 54	62.1	67.4	76.7	14.5	54.5	66.4	76.1	21.7
55 and over	47.5	48.9	51.0	3.5	40.4	46.1	51.6	11.3
Education								
Less than Grade 12	49.8	47.1	59.3	9.5	45.3	47.2	52.8	7.5
Grade 12	76.3	72.6	80.4	4.2	68.1	69.3	72.2	4.1
Some postsecondary	82.9	83.8	89.5	6.6	80.6	80.1	81.6	1.0
University degree	90.2	93.1	93.5	3.3	90.5	90.3	89.8	-0.7
Marital status								
Never married	53.2	59.2	77.3	24.1	49.6	53.5	65.2	15.6
Divorced or separated	75.8	79.5	85.8	10.0	65.7	72.7	78.9	13.2
Widow	58.0	63.3	67.2	9.2	54.2	63.9	67.2	13.1
Race								
Whites	77.6	80.2	86.8	9.2	60.2	66.5	75.3	15.1
Blacks	59.1	64.8	78.2	19.1	81.1	67.4	69.8	-11.3
Asians	70.4	64.5	78.2	7.8	74.2	65.7	66.2	-8.0
Hispanics[1]	50.7	57.7	72.6	21.9				
Others	63.2	64.2	78.0	14.8	63.6	54.1	64.8	1.2
Total	69.1	72.3	81.7	12.6	61.0	66.4	73.1	12.1

1. Canadian data for Hispanics are combined with data for "Others."
Note: Estimates for the United States are calculated by the authors from the U.S. census Public-Use Microdata Sample files. Estimates for Canada are calculated by the authors from master data files from the Canadian census. Employment and earnings are reported for the year preceding the census.
Sources: Statistics Canada, Census of Canada, 1981, 1991 and 2001; U.S. Census Bureau, U.S. Census, 1980, 1990 and 2000.

Together, these Canada–United States differences provide a first hint that the process driving these changes was rather different in the two countries. In the United States, the largest employment gains were among groups who traditionally were least likely to be employed—the young, racial minorities and the never married. Gains made by these groups occurred mainly in the 1990s and were much larger than in Canada. Conversely, the large gains among older women (40 and over) were mainly a product of the 1980s and were substantially larger in Canada than in the United States. These differences among older single mothers were similar to those of married mothers. In 1979 and 1980, rates of labour force participation among married mothers were virtually identical in the two countries and this was true of almost all age and education categories. Over the next two decades, however, the participation rate of Canadian married mothers rose by 21 percentage points compared

with only 14 percentage points in the United States. In sum, changes in incentives, opportunities, and/or preferences for employment among single and married mothers seem to have differed considerably in the two countries.

Table 4
Mean annual earnings of mothers with children under 18 years of age and with positive earnings

	United States				Canada			
	1979	1989	1999	Change (%) 1979 to 1999	1980	1990	2000	Change (%) 1980 to 2000
	1999 constant dollars				2000 constant dollars			
Age								
Under 25	11,303	9,491	11,506	1.8	10,688	9,248	9,795	-8.4
25 to 29	17,391	15,879	17,331	-0.3	16,976	15,323	15,892	-6.4
30 to 34	20,784	20,357	21,007	1.1	22,033	20,843	20,589	-6.6
35 to 39	22,862	24,581	24,675	7.9	24,895	25,422	25,345	1.8
40 to 44	22,704	27,460	27,608	21.6	25,364	29,343	28,405	12.0
45 to 49	21,874	26,739	30,705	40.4	23,705	30,209	32,352	36.5
50 to 54	20,349	23,374	30,456	49.7	22,158	26,849	32,779	47.9
55 and over	17,542	19,255	24,108	37.4	19,760	21,099	26,487	34.0
Education								
Less than Grade 12	14,084	11,697	13,374	-5.0	16,473	15,960	16,713	1.5
Grade 12	19,286	17,754	18,303	-5.1	20,773	21,085	21,304	2.6
Some postsecondary	22,435	23,054	23,328	4.0	24,462	24,891	25,457	4.1
University degree	30,401	36,531	39,556	30.1	39,861	42,060	41,870	5.0
Marital status								
Never married	15,139	15,570	18,127	19.7	17,777	17,618	19,901	11.9
Divorced or separated	20,770	23,117	25,357	22.1	22,680	25,333	27,845	22.8
Widow	17,991	20,012	23,459	30.4	20,471	23,450	26,152	27.8
Race								
Whites	20,510	22,557	24,853	21.2	21,710	23,405	25,927	19.4
Blacks	18,171	18,888	20,518	12.9	20,680	22,379	21,805	5.4
Asians	21,818	26,216	28,844	32.2	23,286	25,228	23,170	-0.5
Hispanics[1]	17,041	18,039	18,796	10.3				
Others	16,313	16,307	20,122	23.3	17,326	18,494	20,907	20.7
Total	19,615	21,062	22,733	15.9	21,684	23,376	25,073	15.6

1. Canadian data for Hispanics are combined with data for "Others."
Note: Estimates for the United States are calculated by the authors from the U.S. census Public-Use Microdata Sample files. Estimates for Canada are calculated by the authors from master data files from the Canadian census. Employment and earnings are reported for the year preceding the census.
Sources: Statistics Canada, Census of Canada, 1981, 1991 and 2001; U.S. Census Bureau, U.S. Census, 1980, 1990 and 2000.

In contrast to the employment trends, earnings trends within socio-demographic groups were generally similar. Over the two decades, virtually all of the earnings gains among single mothers went to women over 40. There was little change within education levels except among university women in the United States. Blacks and Asians in Canada faired poorly relative to their White counterparts. In the United States, Blacks had smaller gains than Whites, but Asians had larger gains. Earnings among younger single mothers fell in the 1980s and recovered somewhat in the 1990s, whereas single mothers in their forties experienced most of their gains in the 1980s.

4 Accounting for change

In this section, we use the Oaxaca-Blinder decomposition to determine the extent to which compositional changes can 'account' for changes in mothers' employment rates and earnings. Our analysis proceeds in two parts. First, we ask to what extent changes in demographic composition can account for changes in the probability of being employed among all single mothers. Second, we consider the effects of compositional changes on the log earnings (annual and weekly) of those who were in paid work. In light of our descriptive results, we conduct our analysis separately for mothers under and over age 40.

4.1 Mothers' probability of being employed

The ordinary least-squares (OLS) regression estimates for the probability of being employed are shown in Appendix Tables 1 and 2 and the results of the multivariate decomposition are summarized in Table 5.

Table 5
Decomposition of change in employment rates among lone mothers with children under 18 years of age

	All				Under 40 years of age				40 years of age and over			
		Change due to				Change due to				Change due to		
	Total=	compo-sition	coeffi-cients	joint	Total=	compo-sition	coeffi-cients	joint	Total=	compo-sition	coeffi-cients	joint
United States												
1979 to 1989	3.2	3.4	-1.1	0.9	1.2	1.7	-1.3	0.9	8.8	8.0	-0.2	0.9
1989 to 1999	9.4	1.1	8.5	-0.2	11.3	0.0	10.8	0.5	4.0	1.9	1.8	0.4
1979 to 1999	12.6	3.8	7.2	1.6	12.6	1.1	9.2	2.2	12.8	9.2	2.0	1.6
Canada												
1980 to 1990	5.4	4.4	1.7	-0.8	1.3	0.7	0.6	0.0	13.9	12.4	3.8	-2.3
1990 to 2000	6.7	3.2	3.5	-0.1	6.6	1.7	4.5	0.3	4.0	2.5	1.4	0.1
1980 to 2000	12.1	7.9	5.2	-1.0	7.9	3.0	4.7	0.2	17.9	15.1	6.3	-3.5

Note: Estimates for the United States are calculated by the authors from the U.S. census Public-Use Microdata Sample files. Estimates for Canada are calculated by the authors from master data files from the Canadian census. Employment and earnings are reported for the year preceding the census.
Sources: Statistics Canada, Census of Canada, 1981, 1991 and 2001; U.S. Census Bureau, U.S. Census, 1980, 1990 and 2000.

Over the two decades, single mothers' employment grew by just over 12 percentage points in both countries. The U.S. gains occurred mainly in the 1990s and while compositional shifts accounted for all of the increase in the 1980s they accounted for less than a third of the change over the entire period. Canadian gains were more evenly spread over the two decades and changes in composition accounted for almost two-thirds of the total change. These results for all single mothers, moreover, reflect large cross-national differences in the experience of younger and older mothers.

In both countries, compositional shifts accounted for most of the change among older (40 and over) single mothers—84% (15.1/17.9) in Canada and 72% (9.2/12.8) in the United States. Since Canadian single mothers are older than their U.S. counterparts, these compositional effects had a larger impact on trends for all Canadian single mothers.

Among younger single mothers, changes in behaviour and other unmeasured variables were the main source of rising labour force participation and occurred mainly in the 1990s. Changes in composition played a minor role. Behavioural effects (changes in the coefficients), however, were much larger in the United States than in Canada—9.2 percentage points and 4.7 percentage points, respectively. Since U.S. single mothers are younger than their Canadian counterparts, these behavioural effects had a much larger impact on the trend for all single mothers.

4.2 The earnings of employed mothers

The OLS regression estimates for log annual earnings of employed mothers are shown in Appendix Tables 3 and 4 and the results of the multivariate decomposition are summarized in Table 6.

Table 6
Decomposition of change in log annual earnings among employed lone mothers with children under 18 years of age

	All				under 40 years of age				40 years of age and over			
		Change due to				Change due to				Change due to		
	Total=	compo-sition	coeffi-cients	joint	Total=	compo-sition	coeffi-cients	joint	Total=	compo-sition	coeffi-cients	joint
United States												
1979 to 1989	0.03	0.10	-0.11	0.05	-0.04	0.07	-0.15	0.04	0.21	0.17	-0.01	0.05
1989 to 1999	0.12	0.01	0.10	0.01	0.10	-0.04	0.12	0.02	0.07	0.03	0.03	0.01
1979 to 1999	0.15	0.09	0.00	0.06	0.06	0.02	-0.02	0.06	0.29	0.19	0.06	0.04
Canada												
1980 to 1990	0.05	0.09	-0.04	0.00	-0.04	0.04	-0.08	0.00	0.23	0.20	0.04	-0.01
1990 to 2000	0.06	0.08	-0.03	0.00	0.02	0.03	-0.02	0.01	-0.01	0.04	-0.05	0.00
1980 to 2000	0.11	0.15	-0.05	0.01	-0.03	0.07	-0.10	0.01	0.22	0.24	0.03	-0.05

Note: Estimates for the United States are calculated by the authors from the U.S. census Public-Use Microdata Sample files. Estimates for Canada are calculated by the authors from master data files from the Canadian census. Employment and earnings are reported for the year preceding the census.
Sources: Statistics Canada, Census of Canada, 1981, 1991 and 2001; U.S. Census Bureau, U.S. Census, 1980, 1990 and 2000.

In both countries, virtually all of the earnings gains over the two decades went to women over 40. Over the two decades, earnings for older single mothers rose 29% in the United States and 22% in Canada, with most of the gains coming during the 1980s. Moreover, compositional shifts were the main source of change, accounting for 65% of the gains among older U.S. single mothers and all of the gains among older Canadian single mothers.

Among younger single mothers, there is little change to account for. In the 1980s, their earnings actually declined by about 4% in both countries. During the 1990s, however, the earnings of younger single mothers in the United States rebounded somewhat, rising by about 9%. Moreover, all of the increase is attributable to changes in the coefficients, while compositional changes actually depressed earnings slightly. In Canada, by contrast, the earnings of younger single mothers were essentially stagnant.

In summary, the largest earnings gains in Canada and the United States went to older single mothers over the two decades and were mainly the result of changes in socio-demographic composition in the 1980s. In the United States, but not in Canada, earnings of younger single mothers rose in the 1990s and were mainly the result of behavioural change, a result consistent with the conclusion that U.S. welfare reform was an important causal agent.

The results for annual earnings, however, leave several important questions unanswered. Changes in annual earnings reflect changes in both wage rates and labour supply (hours and weeks worked). One must disentangle the effects of these two factors to answer a number of important questions. For example, the large gains in annual earnings experienced by older single mothers as a result of changes in their educational levels and other characteristics could occur for two reasons: first, one would expect that higher levels of education would result in higher earnings per hour and week worked; second, it could be that the better educated were simply working more weeks and hours per year.

To address this sort of question, we compare changes in log annual earnings with changes in log weekly earnings, controlling for whether the respondent usually worked on a full-time or part-time basis.[7] We take advantage of the fact that the change in the mean of log annual earnings is simply the sum of the change in the mean of log weekly earnings and the mean of log weeks worked so that changes in log weeks worked can be simply calculated as a residual.

Among older (40 and over) single mothers (Table 7) the results indicate that most of the gains reflected their increased earnings power as a result of higher education levels. Over the two decades, annual earnings rose by 22% and 29% in Canada and the United States, respectively. Comparison with the results for weekly earnings indicate that most of these gains—59% (0.13/0.22) in Canada and 73% (0.21/0.29) in the United States—were the result of higher earnings per week rather than more weeks worked per year. Moreover, in both countries, the increase in weekly earnings was mainly the result of compositional changes that occurred in the 1980s.

In contrast, the pattern among younger single mothers, especially in the United States, indicates that most of the gains in annual earnings were the result of increased work effort. Consistent with the welfare reform thesis, annual earnings in the United States rose by 10% in the 1990s but rose only by 2% on a weekly basis, indicating that most of the gains were the result of increased labour supply (weeks worked). In Canada, a small decline in weekly earnings (4%) was offset by a modest increase in weeks worked, and annual earnings rose by 2%.

7. Ideally we would take account of changes in both weeks worked and hours worked per week (it equals the total hours worked per year) to calculate changes in hourly wages. The Canadian census provides no way to estimate annual hours worked.

Table 7
Decomposition of change in log annual and weekly earnings among lone mothers in Canada and the United States

	under 40 years of age				40 years of age and over			
		Change due to				Change due to		
	Total=	composition	coefficients	Joint	Total=	composition	coefficients	Joint
United States								
1979 to 1989								
Annual	-0.04	0.07	-0.15	0.04	0.21	0.17	-0.01	0.05
Weekly	-0.04	0.04	-0.11	0.02	0.16	0.15	-0.03	0.05
1989 to 1999								
Annual	0.10	-0.04	0.12	0.02	0.07	0.03	0.03	0.01
Weekly	0.02	0.01	0.01	0.00	0.04	0.04	0.00	0.00
1979 to 1999								
Annual	0.06	0.02	-0.02	0.06	0.29	0.19	0.06	0.04
Weekly	-0.02	0.04	-0.09	0.03	0.21	0.17	-0.01	0.04
Canada								
1980 to 1990								
Annual	-0.04	0.04	-0.08	0.00	0.23	0.20	0.04	-0.01
Weekly	-0.04	0.02	-0.07	0.00	0.16	0.15	0.01	0.00
1990 to 2000								
Annual	0.02	0.03	-0.02	0.01	-0.01	0.04	-0.05	0.00
Weekly	-0.04	0.02	-0.07	0.00	-0.04	0.02	-0.06	0.00
1980 to 2000								
Annual	-0.03	0.07	-0.10	0.01	0.22	0.24	0.03	-0.05
Weekly	-0.09	0.03	-0.14	0.02	0.13	0.17	-0.03	-0.01

Note: Estimates for the United States are calculated by the authors from the U.S. census Public-Use Microdata Sample files. Estimates for Canada are calculated by the authors from master data files from the Canadian census. Employment and earnings are reported for the year preceding the census.
Sources: Statistics Canada, Census of Canada, 1981, 1991 and 2001; U.S. Census Bureau, U.S. Census, 1980, 1990 and 2000.

Comparison of the decomposition analyses for weekly earnings among younger single mothers is also instructive. Both countries have experienced declines in the wage rates of younger workers relative to older workers since the 1970s (Boudarbat, Lemieux and Riddell 2006; Card and DiNardo 2002) and this trend also affected the earnings of younger single mothers. In both countries, small compositional gains reflecting higher levels of education and other characteristics were offset by a large decline in the 'returns' to these characteristics. Over the two decades, returns to labour market relevant characteristics (change in the coefficients) declined by 9% in the United States and by 14% in Canada on a weekly basis, declines that were only partially offset by compositional changes. As a result, total weekly earnings of younger single mothers declined by 2% in the United States and by 9% in Canada over the two decades.

In short, gains in annual earnings among older employed single mothers mainly reflected their increased earnings power as a result of higher education levels rather than increased labour supply. In contrast, the modest gains of younger lone mothers mainly reflected an increase in weeks worked.

5 Discussion and conclusion

In both Canada and the United States, rising employment among older (40 and over) single mothers occurred mainly in the 1980s and was largely the result of changing composition. In contrast, changes among younger single mothers were mainly confined to employment levels, not earnings, took place in the 1990s and had little to do with rising education or other compositional changes. The gains in annual earnings among older employed single mothers mainly reflected their increased earnings power as a result of higher education levels rather than increased labour supply. In contrast the modest gains of younger lone mothers mainly reflected an increase in weeks worked.

These broad similarities, however, mask two large differences in the magnitude of these effects. While compositional changes dominated the account for older single mothers, the magnitude of these compositional effects was substantially larger in Canada than in the United States, despite the fact that compositional changes were somewhat larger in the United States. The share of older single mothers with some postsecondary schooling or a university degree rose by 32 percentage points in the United States, compared with 28 percentage points in Canada. Instead, differences in trends among older single mothers reflected the larger Canadian gains in mothers' employment rates more generally. Over the two decades, employment among Canadian married mothers rose from 58% to 80% (22 percentage points), compared with an increase from 59% to 73% (14 percentage points) in the United States.

The pattern was reversed among younger single mothers. Despite starting from a higher base, the employment gains among U.S. single mothers under 30 were two to three times higher than in Canada and mainly due to differences in 'behavioural' changes. While our data do not allow us to demonstrate the reasons for this difference, the much stronger behavioural effect in the United States is consistent with the standard set of stylized facts concerning differences in the extent to which social provisions in the two countries enable single mothers to remain at home.

Traditionally, both nations have relied on welfare provisions for single parents that provided strong disincentives to employment, namely means-tested programs that were reduced dollar for dollar as earnings rose. Nevertheless, significantly higher social transfers have arguably made non-employment a somewhat more viable alternative in Canada than in the United States. Blank and Hanratty's simulations (1993) with 1986 data show that single-parent poverty in the U.S. population would decline substantially under a Canadian-style transfer system. Moreover, over the 1980s, income transfers to single mothers were falling in the United States and rising in Canada (Hanratty and Blank 1992).

During the 1990s, both countries went through welfare reforms that were aimed at increasing work incentives for single mothers. In the United States, however, these reforms were national in scope, introduced as a result of the *Personal Responsibility Act* in 1996. In Canada, significant cuts in social assistance and changes in eligibility criteria were at the discretion of the provinces, and large reductions were mainly confined to Ontario and Alberta.[8]

Equally important, both countries have introduced 'carrots' as well as 'sticks' to encourage employment (Myles and Pierson 1997). In the United States, the Earned Income Tax Credit (EITC), introduced by Richard Nixon, has been expanded under every subsequent administration except for the most recent. The Canadian variant has been evolving since 1978, culminating with the adoption of the National Child Benefit (NCB) in 1997 but with an important difference. Since access to EITC is conditional on earnings, single mothers **must** be employed in order to benefit. The NCB, in contrast, also provides income-tested benefits to the non-working poor. Indeed, stay-at-home mothers with zero earnings receive the highest benefits (Mendelson 2003). While neither country's benefits are generous by international standards (Rainwater and Smeeding 2003), both the level and changes in incentives to work are undoubtedly much stronger for American single mothers.

The finding that the labour market behaviour of younger and older single mothers in the same social policy environment are very different is hardly novel. Dooley (1999) reports sharp differences between the labour force participation rates of single mothers under 35 compared with single mothers over 35. Analysing changes in welfare participation of Canadian single mothers in the 1973-to-1991 period, he finds that single mothers under 35 had an increasing reliance on social assistance, accompanied by stagnant wages and declining labour force participation. Single mothers over 35, in contrast, showed decreasing reliance on social assistance, accompanied by rising wages and earnings. Women who become single mothers later in life are more likely to have significant labour force experience and to be exiting from unions with considerably higher family earnings. Juby, Le Bourdais and Marcil-Gratton (2003: 20) show that single mothers' financial circumstances after separation are closely linked to the intact family income before separation. The most affluent single mothers, for instance, are those from the most affluent intact families, who were already fully involved in the labour force before they separated.

At the end of the 1990s, the increase in single mothers' employment was welcomed largely because of the associated decline in single mother poverty rates. Based on Luxembourg Income Study (LIS) poverty measures (families with incomes less than 50% of median income), single mother poverty stood at 52% in the United States and 49% in Canada at the end of the 1970s. During the 1980s, rates rose in the United States—to 61% in 1991—but fell back to 49% in 2000 (LIS key figures). In Canada, rates were more or less stable over the 1980s but then declined to 41% in 2000.

It would be naïve, however, to conclude that the declining poverty rates of the 1990s are indicative of a longer-term trend that is likely to continue into the future. At 82 %, the labour force participation rate of single mothers in the United States was reaching saturation levels by 1999 and

8. Separate analyses for these two provinces also show a somewhat different pattern from national trends. During the 1990s, employment levels rose by 8.8 and 7.5 percentage points among lone mothers in Alberta and Ontario, respectively. Quebec lone mothers, however, had the highest employment growth in the 1990s (9.4 percentage points) and, by 2000, their employment levels were 4 percentage points higher than in the rest of Canada. Compositional shifts accounted for only 28% of the growth in the 1990s, results that are consistent with conclusions concerning the effects of liberalized child-care provisions in that province (Baker, Gruber and Milligan 2005; Lefebvre and Merrigan 2005).

it was significantly higher than the rate for married mothers with children, which stood at 73%. Moreover, the majority of employed U.S. single mothers were employed almost full year (40 weeks and more). There is little room for future gains from encouraging or compelling even stronger labour market attachment by additional benefit reductions.[9] There is more room for additional gains among Canadian single mothers, where employment levels reached 73% in 2000, compared with 80% for married mothers. But the demographically driven gains of Canadian single mothers in the past quarter century are unlikely to be repeated in the future. The aging of the baby boom was a one-time event that will only be faintly 'echoed' as their children enter their child-bearing years.

9. From 1994 to 2003, maximum monthly Aid to Families with Dependent Children and Temporary Assistance for Needy Families benefits for single parents fell in all U.S. states except 5; in 25 states, maximum benefits fell by 18% (Green Book, Table 7-10). Since 1970, maximum benefits have fallen by 40% or more in 42 states. (Green Book, Table 7-13).

Appendix 1
Ordinary Least Squares estimates of the probability of employment for lone mothers with children under 18 years of age in Canada and the United States

	Canada			United States		
	1980	1990	2000	1979	1989	1999
Intercept	0.568	0.614	0.656	0.691	0.669	0.691
Age 15 to 24	-0.067	-0.117	-0.117	-0.042	-0.049	0.002 n
Age 25 to 29	-0.034	-0.082	-0.047	0.002 n	-0.018	0.048
Age 30 to 34	0.001 n	-0.028	-0.015	0.023	0.007	0.036
Age 35 to 39	0.016	0.004 n	-0.003 n	0.022	0.015	0.020
Age 45 to 49	-0.045	-0.027	-0.020	-0.037	-0.033	-0.029
Age 50 to 54	-0.118	-0.080	-0.060	-0.092	-0.075	-0.071
Age 55 and over	-0.230	-0.199	-0.220	-0.189	-0.178	-0.235
University degree	0.370	0.348	0.317	0.274	0.334	0.293
Some postsecondary	0.297	0.276	0.247	0.234	0.275	0.254
High school	0.195	0.187	0.166	0.187	0.193	0.176
Number of children	-0.084	-0.078	-0.050	-0.061	-0.069	-0.029
With children under 6	-0.083	-0.063	-0.081	-0.105	-0.075	-0.038
Separated or divorced	0.086	0.072	0.003	0.105	0.097	0.038
Widowed	0.078	0.027	-0.011 n	-0.016	-0.005 n	-0.074
Immigrant	0.119	0.107	0.070	-0.058	0.006 n	-0.003 n
Blacks	0.145	0.023	-0.002 n	-0.073	-0.048	-0.039
Hispanics	...	...	...	-0.108	-0.083	-0.045
Asians	0.035	-0.042	-0.064	-0.006 n	-0.098	-0.041
Others	-0.067	-0.134	-0.060	-0.051	-0.067	-0.050
R-square	0.162	0.155	0.121	0.176	0.178	0.110
Sample size	71,308	92,043	112,509	257,075	312,299	384,958

...not applicable
n = not significant at $p < 0.05$.
Notes: Estimates for the United States are calculated by the authors from the U.S. census Public-Use Microdata Sample files. Estimates for Canada are calculated by the authors from master data files from the Canadian census. Employment and earnings are reported for the year preceding the census. Age 40 to 44 is the reference group.
Sources: Statistics Canada, Census of Canada, 1981, 1991 and 2001; U.S. Census Bureau, U.S. Census, 1980, 1990 and 2000.

Appendix 2
Ordinary Least Squares estimates of the probability of employment for lone and married mothers, by mother's age

	Canada			United States		
	1980	1990	2000	1979	1989	1999
Mothers younger than 40						
Intercept	0.609	0.643	0.674	0.720	0.692	0.717
Age 15 to 24	-0.086	-0.119	-0.118	-0.064	-0.062	-0.027
Age 25 to 29	-0.051	-0.083	-0.045	-0.021	-0.031	0.023
Age 30 to 34	-0.014	-0.031	-0.012	0.000 n	-0.006	0.014
University degree	0.356	0.343	0.324	0.271	0.334	0.276
Some postsecondary	0.280	0.268	0.246	0.231	0.269	0.253
High school	0.175	0.175	0.149	0.185	0.187	0.175
Number of children	-0.093	-0.091	-0.061	-0.064	-0.073	-0.031
With children under 6	-0.087	-0.067	-0.078	-0.107	-0.075	-0.031
Separated or divorced	0.096	0.089	-0.013	0.110	0.102	0.037
Widowed	0.075	0.014	-0.017 n	-0.029	-0.011 n	-0.099
Immigrant	0.125	0.117	0.075	-0.074	0.007	-0.016
Blacks	0.127	0.012 n	-0.006 n	-0.069	-0.047	-0.035
Hispanics	...	...	...	-0.107	-0.089	-0.049
Asians	0.026 n	-0.057	-0.048	-0.021 n	-0.118	-0.044
Others	-0.077	-0.131	-0.064	-0.039	-0.064	-0.048
R-square	0.161	0.149	0.118	0.182	0.173	0.101
Sample size	45,107	63,106	64,927	186,179	200,622	253,965
Mothers aged 40 and over						
Intercept	0.544	0.561	0.624	0.695	0.651	0.676
Age 45 to 49	-0.039	-0.019	-0.015	-0.035	-0.030	-0.032
Age 50 to [illegible]	-0.109	-0.069	-0.053	-0.090	-0.071	-0.075
Age 55 and over	-0.218	-0.190	-0.213	-0.189	-0.176	-0.239
University degree	0.385	0.357	0.314	0.278	0.342	0.309
Some postsecondary	0.324	0.289	0.248	0.238	0.291	0.254
High school	0.232	0.217	0.192	0.189	0.213	0.178
Number of children	-0.070	-0.042	-0.030	-0.052	-0.052	-0.026
With children under 6	-0.058	-0.040	-0.091	-0.085	-0.077	-0.055
Separated or divorced	0.098	0.082	0.062	0.078	0.068	0.046
Widowed	0.068	0.046	0.003 n	-0.031	-0.024	-0.056
Immigrant	0.081	0.040	-0.006 n	-0.032	-0.004 n	0.015
Blacks	0.185	0.046	0.003 n	-0.084	-0.050	-0.045
Hispanics	...	...	...	-0.107	-0.060	-0.033
Asians	0.044	-0.024 n	-0.079	0.006 n	-0.064	-0.042
Others	-0.040 n	-0.129	-0.051	-0.085	-0.074	-0.052
R-square	0.168	0.139	0.106	0.163	0.185	0.136
Sample size	26,200	28,936	47,582	70,896	81,780	130,874

...not applicable
n = not significant at $p < 0.05$.
Notes: Estimates for the United States are calculated by the authors from the U.S. census Public-Use Microdata Sample files. Estimates for Canada are calculated by the authors from master data files from the Canadian census. Employment and earnings are reported for the year preceding the census. Age 40 to 44 is the reference group.
Sources: Statistics Canada, Census of Canada, 1981, 1991 and 2001; U.S. Census Bureau, U.S. Census, 1980, 1990 and 2000.

Appendix 3
Ordinary Least Squares estimates of log employment earnings for lone and married mothers with children under 18 years of age

	Canada			United States		
	1980	1990	2000	1979	1989	1999
Intercept	9.70	9.60	9.56	9.46	9.35	9.38
Age 15 to 24	-0.92	-1.11	-1.02	-0.68	-0.92	-0.70
Age 25 to 29	-0.42	-0.62	-0.54	-0.24	-0.41	-0.28
Age 30 to 34	-0.15	-0.30	-0.28	-0.07	-0.17	-0.13
Age 35 to 39	-0.01 n	-0.11	-0.09	0.03	-0.03	-0.04
Age 45 to 49	-0.05	-0.03 n	0.06	-0.05	-0.04	0.02
Age 50 to 54	-0.16	-0.10	0.01 n	-0.11	-0.09	-0.02
Age 55 and over	-0.24	-0.24	-0.19	-0.22	-0.15	-0.09
University degree	0.85	0.95	0.91	0.75	1.12	1.09
Some postsecondary	0.45	0.47	0.47	0.51	0.72	0.66
High school	0.31	0.33	0.27	0.40	0.50	0.42
Number of children	-0.21	-0.17	-0.13	-0.14	-0.17	-0.09
With children under 6	-0.12	-0.05	-0.07	-0.18	-0.10	-0.07
Separated or divorced	0.01	0.06	0.04	0.17	0.17	0.09
Widowed	0.05 n	0.05	-0.08 n	-0.11	-0.10	-0.12
Immigrant	0.14	0.19	0.16	0.04	0.09	0.02
Blacks	0.05 n	0.03 n	-0.03 n	0.04	-0.03	-0.06
Hispanics	...	...	...	0.00 n	0.01 n	-0.05
Asians	0.02 n	-0.05 n	-0.16	0.03 n	0.07	0.04
Others	-0.23	-0.26	-0.13	-0.15	-0.26	-0.13
R-square	0.131	0.155	0.123	0.144	0.213	0.190
Sample size	43,350	60,929	82,117	176,687	228,253	314,636

...not applicable

n = not significant at $p < 0.05$.

Notes: Estimates for the United States are calculated by the authors from the U.S. census Public-Use Microdata Sample files. Estimates for Canada are calculated by the authors from master data files from the Canadian census. Employment and earnings are reported for the year preceding the census. Age 40 to 44 is the reference group.

Sources: Statistics Canada, Census of Canada, 1981, 1991 and 2001; U.S. Census Bureau, U.S. Census, 1980, 1990 and 2000.

Appendix 4
Ordinary Least Squares estimates of log annual earnings for lone and married mothers, by mother's age

	Canada						United States					
	1980		1990		2000		1979		1989		1999	
Mothers younger than 40												
Intercept	9.74		9.54		9.52		9.50		9.32		9.34	
Age 15 to 24	-0.90		-1.00		-0.94		-0.71		-0.88		-0.66	
Age 25 to 29	-0.41		-0.50		-0.45		-0.28		-0.37		-0.23	
Age 30 to 34	-0.14		-0.18		-0.19		-0.10		-0.13		-0.09	
University degree	0.75		0.87		0.87		0.73		1.12		1.08	
Some postsecondary	0.43		0.43		0.44		0.51		0.73		0.66	
High school	0.31		0.30		0.24		0.42		0.52		0.43	
Number of children	-0.25		-0.20		-0.16		-0.16		-0.18		-0.10	
With children under 6	-0.14		-0.05		-0.07		-0.19		-0.11		-0.07	
Separated or divorced	0.08		0.14		0.08		0.18		0.18		0.09	
Widowed	0.05		0.06		-0.08	n	-0.12		-0.12		-0.13	
Immigrant	0.17		0.21		0.17		0.05		0.11		0.03	
Blacks	0.04	n	0.04	n	0.01	n	0.06		-0.03		-0.05	
Hispanics	...		...		...		0.03		0.04		-0.01	
Asians	-0.01	n	0.00	n	-0.14		0.02		0.11		0.08	
Others	-0.21	n	-0.24		-0.13		-0.15		-0.25		-0.11	
R-square	0.141		0.1338		0.108		0.155		0.203		0.174	
Sample size	27,716		39,579		44,953		128,547		142,472		208,362	
Mothers aged 40 and over												
Intercept	9.75		9.54		9.50		9.45		9.36		9.42	
Age 45 to 49	-0.03		-0.01	n	0.06		-0.04		-0.03		0.02	
Age 50 to 54	-0.13		-0.07		0.02	n	-0.10		-0.08		-0.01	n
Age 55 and over	-0.21		-0.19		-0.17		-0.21		-0.15		-0.08	
University degree	0.99		1.03		0.94		0.77		1.10		1.06	
Some postsecondary	0.47		0.54		0.49		0.48		0.70		0.62	
High school	0.29		0.39		0.31		0.34		0.45		0.36	
Number of children	-0.17		-0.12		-0.10		-0.10		-0.13		-0.07	
With children under 6	0.03	n	-0.03		-0.09		-0.09		-0.08		-0.05	
Separated or divorced	-0.02	n	0.12		0.15		0.14		0.13		0.07	
Widowed	-0.16		-0.03	n	0.02	n	-0.13		-0.12		-0.12	
Immigrant	0.05		0.03	n	-0.07		0.05		0.07		0.01	n
Blacks	0.01	n	0.01	n	-0.09		-0.02	n	0.00	n	-0.09	
Hispanics	...		...		...		-0.11		-0.09		-0.14	
Asians	0.05	n	-0.09		-0.18		0.04	n	0.01	n	-0.01	n
Others	-0.28		-0.31		-0.13		-0.16		-0.29		-0.16	
R-square	0.090		0.102		0.073		0.095		0.144		0.136	
Sample size	15,633		21,350		37,164		48,140		63,363		106,274	

...not applicable
n = not significant at $p < 0.05$.
Notes: Estimates for the United States are calculated by the authors from the U.S. census Public-Use Microdata Sample files. Estimates for Canada are calculated by the authors from master data files from the Canadian census. Employment and earnings are reported for the year preceding the census. Age 40 to 44 is the reference group.
Sources: Statistics Canada, Census of Canada, 1981, 1991 and 2001; U.S. Census Bureau, U.S. Census, 1980, 1990 and 2000.

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